

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Original) A method of fabricating a self-assembled monolayer of a substance on a substrate comprising depositing the substance on the substrate using compressed carbon dioxide as the solvent medium for the substance.

2. (Original) A method as claimed in claim 1, wherein the pressure and/or temperature of the compressed carbon dioxide is/are selectively controlled so as to enhance the density of the self-assembled monolayer on the substrate.

3. (Original) A method as claimed in claim 1 comprising the use of a co-solvent in combination with the compressed carbon dioxide.

4. (Original) A method as claimed in claim 3, wherein the co-solvent comprises at least one of H₂O, CH₃OH, CF₃OH, CF₃CH₂OH, CF₃CF₂OH, (CF₃)₂CHOH, CH₄, C₂H₄, C₂F₆, CHF₃ CCIF₃, C₂H₆, SF₆, Propylene, Propane, NH₃, Pentane, iPrOH, MeOH, EtOH, iBuOH, Benzene, Pyridine.

5. (Original) A method as claimed in claim 1, wherein the substrate comprises a metallic substance.

6. (Original) A method as claimed in claim 5, wherein the metallic substance comprises at least one of gold, silver, copper, iron, mercury, palladium, gallium arsenide, ferrous oxide, indium tin oxide.

7. (Original) A method as claimed in claim 6, wherein the substance comprises a semi-fluorinated sulphur containing compound of the formula:



Where X comprises R-SH, RS-SR or R-S-R, where R denotes the rest of the molecule;

Y comprises a functional group; and

m and n denote respectively the number of fluorinated and non-fluorinated carbon atoms.

8. (Original) A method as claimed in claim 7, wherein X comprises a disulphide of sulphur.

9. (Original) A method as claimed in claim 7, wherein X comprises a thiol.

10. (Original) A method as claimed in claim 7, wherein Y comprises a CF_3 functional group.

11. (Original) A method as claimed in claim 7, wherein m and n lie within the range of 1 to 20.

12. (Original) A method as claimed in claim 11, wherein m and n lie within the range of 5 to 10.

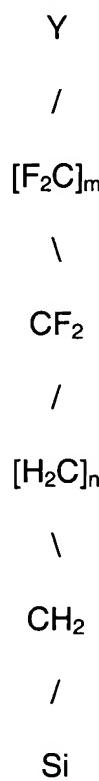
13. (Original) A method as claimed in claim 12, where m is 8 and n is 10.

14. (Original) A method as claimed in claim 7, wherein Y further comprises at least one of vinyl, styryl, acryloyl, methacryloyl or alkyne in combination with a spacer group.

15. (Original) A method as claimed in claim 14, wherein the spacer group comprises at least one of CH_2 or CF_2 .

16. (Original) A method as claimed in claim 1, wherein the substrate comprises at least one of glass, mica, SiO_2 , Al_2O_3 , Ga_2O_3 or ITO.

17. (Original) A method as claimed in claim 16, wherein the substance comprises a semi-fluorinated silane derivative of the formula:



where Y comprises a functional group; and

m and n denote respectively the number of fluorinated and non-fluorinated carbon atoms.

18. (Original) A method as claimed in 17, wherein Si comprises a trialkoxy derivative.

19. (Original) A method as claimed in claim 18, wherein Si comprises at least one of SiCl_3 , $\text{Si}(\text{OCH}_3)_3$, $\text{Si}(\text{OCH}_2\text{CH}_3)_3$, $\text{Si}(\text{OCH}_3)_2\text{Cl}$ or $\text{Si}(\text{CH}_2\text{CH}_3)_2\text{Cl}$.

20. (Original) A method as claimed in claim 17, wherein Y comprises a CF_3 functional group.

21. (Original) A method as claimed in claim 17, wherein m and n lie within the range of 1 to 20.

22. (Original) A method as claimed in claim 21, wherein m and n lie within the range of 5 to 10.

23. (Original) A method as claimed in claim 22, wherein m is 6 and n is 1.

24. (Original) A method as claimed in claim 17, wherein Y further comprises at least one of vinyl, styryl, acryloyl, methacryloyl or alkyne in combination with a spacer group.

25. (Original) A method as claimed in claim 24, wherein the spacer group comprises at least one of CH₂ or CF₂.

26. (Original) A method as claimed in claim 1, wherein the self-assembled monolayer has an ellipsometry thickness of about 30Å and a water contact angle of about 110°.

27. (Original) An inkjet head comprising a self-assembled monolayer as claimed in any one of claims 1 to 15 or claim 26, when appendant to any one of claims 1 to 15.

28. (Original) An electronic, optical or optoelectronic device comprising a self-assembled monolayer as claimed in any one of claims 1 to 5 or claims 16 to 26 or claim 26 when appendant to any one of claims 1 to 5, or 16 to 25.

29. (Original) A device as claimed in claim 28 comprising a thin film transistor or an organic semiconductor device, or a light emitting diode.

30. (Original) A device as claimed in claim 29, wherein the light emitting diode comprises an organic polymer light emitting diode.